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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/386,646	08/31/99	FAZAN	P 660073.488D1

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MM92/0802

EXAMINER

VU.H

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 08/02/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

# Office Action Summary

Application No.  
09/386,646

Applicant(s)

GAZAN ET AL.

Examiner

HUNG VU

Group Art Unit  
2811



☒ Responsive to communication(s) filed on May 15, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 22-37 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 22-37 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Other

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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### **DETAILED ACTION**

1. Applicant's communication filed 05/15/00, has been carefully considered by the examiner. The arguments advanced therein are persuasive with respect to the rejections of record, and some of those rejections are accordingly withdrawn. In view of a further search, however, a new rejection is set forth further below. This action is not made final.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 30-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 30, line 4, "the trench" lacks of antecedent basis.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Claims 22, 32, and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Manning (PN 5,177,028, of record).

Manning discloses a microelectronic device comprising,

a microelectronic substrate (12);

a structure including a gate oxide layer (26) formed on the substrate and a first gate layer (28) formed on the gate oxide layer, the structure having a trench (108) at least partially disposed therein and extending into the substrate;

a field oxide layer (112) at least partially in the trench, the field oxide layer having a field oxide level between the level of an upper surface of the substrate and the level of an upper surface of the first gate layer;

a gate structure formed on the substrate;

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a field oxide deposited in the trench, the field oxide extending from the trench beyond the surface of the substrate, by a height which is less than approximately one half of a height of the gate structure formed on the substrate;

wherein the first gate layer comprises a polysilicon layer;

wherein the field oxide level is less than or equal to approximately one half the distance between the upper surface of the substrate and the upper surface of the first gate layer. Note Figures 7-13 of Manning.

4. Claims 22-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsumoto et al. (PN 5,726,479).

Matsumoto et al. discloses a microelectronic device comprising,

a microelectronic substrate (1);

a structure including a gate oxide layer (3) formed on the substrate and a first gate layer (lower portion of 4b) formed on the gate oxide layer, the structure having a trench at least partially disposed therein and extending into the substrate;

a field oxide layer (2b) at least partially in the trench, the field oxide layer having a field oxide level between the level of an upper surface of the substrate and the level of an upper surface of the first gate layer;

a polysilicon adhesion layer (upper portion of 4b) formed at least partially over the first gate layer and the field oxide layer;

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a tungsten silicide layer (9a,9b) formed over the polysilicon adhesion layer;

a component formed on the field oxide, the component extending from the field oxide by a height at least equal to approximately two times a height that the field oxide extends from the trench beyond the surface of the substrate;

an oxide spacer (7b) adjacent the component;

a gate structure formed on the substrate;

a field oxide deposited in the trench, the field oxide extending from the trench beyond the surface of the substrate, by a height which is less than approximately one half of a height of the gate structure formed on the substrate;

an oxide spacer (7a) adjacent the gate structure

wherein the first gate layer comprises a polysilicon layer;

wherein the field oxide level is less than or equal to approximately one half the distance between the upper surface of the substrate and the upper surface of the first gate layer. Note Figures 1-23(e) (especially Figures 12-14(e) and an attachment) of Matsumoto et al..

### ***Response to Arguments***

5. Applicant's arguments filed 05/15/00 have been fully considered but they are not persuasive.

It is argued, at pages 5-7 of the Remarks, that Manning does not disclose the ~~filed~~<sup>field</sup> oxide layer having a field oxide level between the level of an upper surface of the substrate and the level of an

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upper surface of the first gate layer. This argument is not convincing. As shown in Figures 7 and 13, Manning clearly discloses the field oxide layer (22) having a field oxide level between the level of an upper surface of the substrate (12) and the level of an upper surface of the first gate layer (28). Therefore, Applicants' claims 22, 32, and 34 does not distinguish over the Manning reference.

### ***Conclusion***

6. Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to ***Hung Vu*** whose telephone number is **(703) 308-4079**. The Examiner is in the Office generally between the hours of 7:30 AM to 4:00 PM (Eastern Standard Time) Monday through Friday.

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Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **(703) 308-0956**.

Vu

July 26, 2000

STEVEN LOKE  
PATENT EXAMINER  
CLASS. DIV.  
*Steven Loke*